

**STATE WATER RESOURCES CONTROL BOARD  
BOARD MEETING SESSION – CENTRAL VALLEY REGIONAL BOARD  
JUNE 21, 2011**

**ITEM 5**

**SUBJECT**

CONSIDERATION OF A RESOLUTION APPROVING AMENDMENTS TO THE WATER QUALITY CONTROL PLAN FOR THE SACRAMENTO RIVER AND SAN JOAQUIN RIVER BASINS FOR THE CONTROL OF METHYLMERCURY AND TOTAL MERCURY IN THE SACRAMENTO-SAN JOAQUIN DELTA ESTUARY

**DISCUSSION**

On April 22, 2010, the California Regional Water Quality Control Board, Central Valley Region (“Central Valley Water Board”) adopted [Resolution R5-2010-0043](#) (the “Basin Plan Amendment”) thereby adopting an amendment to the *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins*, Fourth Edition, revised September 2009 (the “Basin Plan”). The Basin Plan Amendment establishes a Total Maximum Daily Load (“TMDL”) for methylmercury in the Sacramento-San Joaquin Delta Estuary and the Yolo Bypass and a control program to implement the TMDL. The Delta Mercury Control Program implementation plan includes an adaptive management framework to be implemented over the next several years to address mercury and methylmercury in the Delta and Yolo Bypass.

The Delta, combined with the San Francisco Bay (the “Bay-Delta Estuary”), forms the largest estuary on the western coast of North America. The Delta encompasses a maze of river channels and embanked islands encompassing approximately 738,000 acres in Alameda, Contra Costa, Sacramento, San Joaquin, Solano and Yolo counties. The Basin Plan amendment establishes a TMDL for both the legal Delta boundary defined by Water Code section 12220 and for the Yolo Bypass, a 73,300-acre floodplain on the west side of the lower Sacramento River.

**Water Quality Standards**

The Basin Plan Amendment clarifies that the commercial and sport fishing beneficial use (“COMM”) should be protected in the Delta and the Yolo Bypass. The amendment also establishes site-specific numeric water quality objectives for methylmercury in fish in the Delta and the Yolo Bypass that would protect humans and fish-eating wildlife in these water bodies. The fish tissue objectives were derived by evaluating a range of fish consumption rates. The resulting objectives are protective of threatened and endangered wildlife species and humans, providing for a moderate level of human consumption of up to four meals of Delta fish per month.

**Impairment**

The Delta is on the Clean Water Act Section 303(d) List of Impaired Water Bodies because of elevated levels of mercury in fish. Beneficial uses of the Delta that are impaired due to the elevated methylmercury levels in fish are wildlife habitat (“WILD”) and human consumption of aquatic organisms, which has received protection under the beneficial use of REC-1. The Delta provides habitat for warm and cold-water species of fish and their associated aquatic communities. Additionally, the Delta and its riparian areas provide valuable wildlife habitat.

There is significant use of the Delta for fishing and for the collection of aquatic organisms for human consumption. Further, water is diverted from the Delta for statewide municipal (“MUN”) and agricultural (“AGR”) use.

Section 303(d) of the federal Clean Water Act requires the state to develop TMDLs for impaired waters. The Porter-Cologne Water Quality Control Act requires that the state establish water quality objectives to protect beneficial uses, and to formulate implementation programs to achieve these objectives. The Basin Plan Amendment establishes objectives to protect fish consumers, as well as a program and schedule to achieve the objectives. The goal of the Basin Plan Amendment is to lower fish mercury levels in the Delta so that the beneficial uses of fishing and wildlife habitat are attained.

### **Sources**

Inorganic mercury in the Central Valley comes primarily from historic mercury and gold mines, from resuspension of contaminated material in stream beds and banks downstream of the mines, and from modern sources, such as atmospheric deposition from local and global sources, waste water treatment plants, and urban runoff. Methylmercury, the most toxic form of mercury, forms primarily when sulfate-reducing bacteria methylate inorganic mercury. Methylmercury in water is the most important factor influencing the amount of mercury in fish. Sources of methylmercury include: methylmercury flux from sediment in open water and wetland habitats, urban runoff, irrigated agriculture, and waste water treatment plants. Water management activities, including water storage, conveyance, and flood control, affect the transport of mercury and the production and transport of methylmercury.

### **Targets and TMDL Allocations**

The Delta Mercury Control Program includes tissue targets that were incorporated into the Basin Plan as fish tissue objectives. The Basin Plan Amendment includes Delta-specific methylmercury fish tissue objectives of 0.08 and 0.24 mg/kg, in fish tissue for large trophic level 3 and 4 fish (150-500 mm total length), respectively, and 0.03 mg/kg for small trophic level 2 and 3 fish (less than 50 mm). The objectives are protective of threatened and endangered wildlife species that consume large and small Delta fish. In addition, the objectives allow people to safely eat 32 g/day (eight ounces, uncooked, per week) of a mixture of Delta fish along with a moderate amount of commercial fish. The fish tissue objectives will be re-evaluated during the scheduled review of the Delta Mercury Control Program.

The Delta Mercury Control Program assigns mass-based methylmercury TMDL allocations to all sources of methylmercury in the Delta and Yolo Bypass. Individual waste load allocations for point sources include the 20 municipal and industrial NPDES facilities that discharge directly to the Delta and Yolo Bypass. Large and small municipal urban runoff agencies also have waste load allocations. Rather than individual load allocations for non-point sources, the TMDL groups the non-point sources by source categories and assigns the allocations to each category. In addition, load allocations for non-point sources are grouped by source category for each of the seven Delta TMDL subareas (Central Delta, Marsh Creek, Mokelumne Rive, Sacramento River, San Joaquin River, West Delta, Yolo Bypass). The methylmercury source categories include agricultural drainage, wetlands, atmospheric deposition, open water, tributary river inputs, and inputs from urban non-point sources.

## **Implementation Program**

The Delta Mercury Control Program includes actions and time schedules to reduce methyl and inorganic mercury sources to the Delta through a phased adaptive approach. The implementation plan for the Delta Mercury Control Program consists of two phases. Phase 1 spans from the U.S. EPA approval date until the Central Valley Water Board conducts a formal review of the program. Phase 1 is expected to last about nine years. Phase 1 emphasizes coordinated studies and pilot projects to develop and evaluate management practices to control methylmercury. Phase 1 includes provisions for: implementing pollution minimization programs and interim mass limits for inorganic mercury point sources in the Delta and Yolo Bypass; controlling discharges of sediment-bound mercury in the Delta and Yolo Bypass that may become methylated in agriculture, wetland, and open-water habitats; and reducing total mercury loading to San Francisco Bay. The program also contains requirements for improving the Cache Creek Settling Basin's trapping efficiency, establishes inorganic mercury load reductions from upstream mercury-contaminated watersheds, establishes a mercury exposure reduction program to protect humans consuming Delta fish, and establishes a schedule and guiding principles for developing a mercury offset program and Phase 1 pilot offset projects.

During Phase 1, the methylmercury control studies are required for the following sources and entities that cause or contribute to the transport of mercury and the production and transport of methylmercury:

- Irrigated agricultural lands that discharge to the Yolo Bypass and Delta subareas that require methylmercury source reductions
- Managed wetlands and wetland restoration projects that discharge to the Yolo Bypass and Delta subareas that require methylmercury source reductions.
- Existing NPDES permitted facilities in the Delta and the Yolo Bypass.
- Sacramento, Stockton, Contra Costa County stormwater agencies.
- State and federal agencies whose projects affect the transport of mercury and the production and transport of methylmercury through the Yolo Bypass and Delta (Department of Water Resources, State Lands Commission, Central Valley Flood Protection Board, U.S. Army Corps of Engineers, and U.S. Bureau of Reclamation).

At the end of Phase 1, the Central Valley Water Board will conduct a formal review of the Delta Mercury Control Program. The review will consider modification of methylmercury reduction goals, fish tissue objectives, methylmercury allocations, and compliance dates. The review will also consider requiring dischargers to implement the inorganic mercury and methylmercury management practices developed in Phase 1. The review will also consider the potential public and environmental benefits and negative impacts of attaining the methylmercury allocations. The Phase 1 review will culminate in a revised Delta Mercury Control Program, which shall be implemented through another Basin Plan amendment in about 2019.

Phase 2 begins after the Phase 1 Delta Mercury Control Program review and lasts until 2030. During Phase 2, dischargers will implement management practices in accordance with schedules adopted for Phase 2 activities. Full compliance with the methylmercury allocations is required by 2030, unless the Central Valley Water Board modifies the final compliance date during the Phase 1 review process.

## **Environmental Analysis**

To satisfy requirements of the California Environmental Quality Act (“CEQA”), the Staff Report developed in support of the Delta Mercury Control Program includes an environmental analysis of the potential impacts of the Basin Plan Amendment. The Basin Plan Amendment will not by itself have a physical effect on the environment, nor will the Phase 1 studies. However, implementation actions taken by responsible entities to comply with some components of the implementation plan and improvements to the environment by controlling mercury and/or methylmercury may have the potential to cause adverse environmental impacts. The environmental analysis determined that implementation of some parts of the Basin Plan Amendment could result in potentially significant impacts to biological resources, greenhouse gas emissions, hydrology/water quality, and utilities/service systems, unless mitigation is incorporated. The Staff Report summarizes reasonable actions to reduce the potential impacts from implementation projects. With few exceptions, potential impacts are expected to be limited and mitigated to less than significant levels, if not completely avoided, through careful project planning, design, and implementation. Mitigation measures lie within the jurisdiction of agencies implementing site-specific projects. The Central Valley Water Board does not have legal authority to specify the manner of compliance with its orders, and thus cannot specify particular implementation projects nor dictate that specific mitigation measures be implemented by any particular project.

The environmental analysis found that the implementation of methylmercury management practices to achieve safe fish mercury levels in the Yolo Bypass has the potential to result in cumulative impacts to habitat that supports endemic species with limited geographic ranges, including such species as the Sacramento splittail and the Delta smelt. Until the Phase 1 control studies have been completed, it is unknown whether the wetlands that act as substantial methylmercury sources in the Yolo Bypass also provide critical habitat to endemic species and whether it will be possible to avoid all potentially significant impacts. Prudent implementation of the Basin Plan Amendment is expected to result in an overall improvement in water quality in the waters of the Delta region and to have significant positive impacts to the environment and public health over the long term by enabling humans and wildlife to safely consume Delta fish.

The Central Valley Water Board found that actions to comply with the Basin Plan Amendment have the potential to cause significant adverse impacts upon the environment. A Statement of Overriding Considerations evaluates the ecological and health benefits of implementing the Basin Plan amendment in relation to the potentially significant adverse impacts. A fishery with mercury-contaminated fish is an environmental justice issue and is a threat to wildlife. Implementation of the Basin Plan amendment will result in an overall improvement in water quality in the Delta region and will have a significant positive impact upon the environment by enabling humans and wildlife to safely consume Delta fish. To the extent significant adverse environmental effects could occur, the Central Valley Water Board balanced the economic, legal, social, and other benefits of the Basin Plan Amendment against the potentially unavoidable environmental risks and found that specific economic, legal, social, and other benefits of the amendment outweigh the potentially unavoidable adverse environmental effects, such that those effects are considered acceptable.

## **ASSOCIATED MERCURY TMDLS**

The Central Valley Water Board has previously adopted Mercury TMDLs (including fish tissue objectives and control programs) for Clear Lake and for the Cache Creek Watershed. The Cache Creek Watershed is the largest single source of mercury to the Yolo Bypass and the Delta. In addition, the San Francisco Bay Water Board has adopted a mercury TMDL for the

Bay. The Delta TMDL uses the same fish consumption criteria as the San Francisco Bay and Cache Creek TMDLs. The Central Valley and San Francisco Bay Water Board staff have been coordinating on technical and policy issues. The State Water Board has approved these TMDLs.

## **POLICY ISSUE**

Should the State Water Board approve the Basin Plan Amendment, which establishes a TMDL for methylmercury in the Delta and Yolo Bypass, establishes site-specific numeric fish tissue objectives, adds an implementation plan designed to achieve the fish tissue objectives, and adds commercial and sport fishing to the list of beneficial uses that are to be protected in the Delta and Yolo Bypass?

## **FISCAL IMPACT**

Central Valley Water Board and State Water Board staff work associated with or resulting from this action will be addressed with existing and future budgeted resources.

## **REGIONAL BOARD IMPACT**

Approval of this resolution will amend one of the Central Valley Water Board's Basin Plans.

## **STAFF RECOMMENDATION**

That the State Water Board:

1. Approves the amendment to the Basin Plan adopted under Central Valley Water Board Resolution R5-2010-0043.
2. Authorizes the Executive Director or designee to submit the amendment adopted under Central Valley Water Board Resolution R5-2010-0043, as approved, and the administrative record for this action to the Office of Administrative Law and the TMDL and fish tissue objectives to the U.S. Environmental Protection Agency for approval.

State Water Board action on this item will assist the Water Boards in reaching Goal 1 of the Strategic Plan Update: 2008-2012 to implement strategies to fully support the beneficial uses for all 2006-listed water bodies by 2030. In particular, approval of this item will assist in fulfilling Objective 1.1 to prepare, adopt, and implement TMDLs, designed to meet water quality standards, for all impaired water bodies on the 2006 list by 2019.

# DRAFT

## STATE WATER RESOURCES CONTROL BOARD RESOLUTION 2011-

### APPROVING AMENDMENTS TO THE WATER QUALITY CONTROL PLAN FOR THE SACRAMENTO RIVER AND SAN JOAQUIN RIVER BASINS FOR THE CONTROL OF METHYLMERCURY AND TOTAL MERCURY IN THE SACRAMENTO-SAN JOAQUIN DELTA ESTUARY

#### WHEREAS:

1. On April 22, 2010, the California Regional Water Quality Control Board, Central Valley Region ("Central Valley Water Board") adopted [Resolution R5-2010-0043](#) (the "Basin Plan Amendment"). The Basin Plan Amendment amends the *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins*, Fourth Edition, revised September 2009 (the "Basin Plan") to establish a Total Maximum Daily Load ("TMDL") for methylmercury in the Sacramento-San Joaquin Delta Estuary and the Yolo Bypass. The Basin Plan Amendment also establishes site-specific numeric fish tissue objectives, adds an implementation plan designed to achieve the fish tissue objectives, and clarifies that the beneficial uses of the Sacramento-San Joaquin Delta Estuary and the Yolo Bypass that are to be protected by the Central Valley Water Board include the commercial and sport fishing beneficial uses.<sup>1</sup>
2. The Central Valley Water Board found that the analysis contained in the Substitute Environmental Documentation, including the Basin Plan Amendment staff report (which contains an environmental analysis of the Basin Plan Amendment), the completed Environmental Checklist including a Statement of Overriding Considerations, and the Board's responses to comments, complies with the requirements of the State Water Board's certified regulatory California Environmental Quality Act process, as set forth in the California Code of Regulations, title 23, section 3775 et seq. Therefore, the Central Valley Water Board approved and adopted the Substitute Environmental Documentation.
3. The Central Valley Water Board found that actions to comply with the Basin Plan Amendment have the potential to cause significant adverse impacts upon the environment. A Statement of Overriding Considerations evaluates the ecological and health benefits of implementing the Basin Plan Amendment in relation to the potentially significant adverse impacts. A fishery with mercury-contaminated fish is an environmental justice issue and is a threat to wildlife. Implementation of the Basin Plan Amendment will result in an overall improvement in water quality in the Delta region and will have a significant positive impact upon the environment by enabling humans and wildlife to safely consume Delta fish. To the extent significant adverse environmental effects could occur, the Central Valley Water Board balanced the economic, legal, social, and other benefits of the Basin Plan Amendment against the potentially unavoidable environmental risks and finds that specific economic, legal, social, and other benefits of the Basin Plan Amendment outweighs the potentially unavoidable adverse environmental effects, such that those effects are considered acceptable.

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<sup>1</sup> Commercial and sport fishing have been protected under the more general beneficial use of "Water Contact Recreation", which includes "fishing" within its definition.

# DRAFT

4. The Central Valley Water Board found that the scientific portions of the Basin Plan Amendment are based on sound scientific knowledge, methods, and practices in accordance with Health and Safety Code section 57004.
5. The Central Valley Water Board found that the Basin Plan Amendment is consistent with the Statement of Policy with Respect to Maintaining High Quality of Waters in California ([State Water Board Resolution 68-16](#)) and the federal Antidegradation Policy (40 C.F.R. § 131.12).
6. The State Water Board finds that the Basin Plan Amendment is in conformance with Water Code section 13240, which specifies that Regional Water Quality Control Boards may revise Basin Plans; section 13241, which authorizes Regional Water Quality Control Boards to establish water quality objectives; section 13242, which requires a program of implementation for water quality objectives; and section 13244, which prohibits adoption of amendments by the Regional Water Boards in the absence of a public hearing. The State Water Board also finds that the water quality standards, which are the beneficial use designations and site specific fish tissue objectives, and TMDL, as reflected in the Basin Plan Amendment, are consistent with the requirements of federal Clean Water Act section 303 (c) and (d), respectively.
7. A Basin Plan Amendment does not become effective until approved by the State Water Board and until the regulatory provisions are approved by OAL. The water quality standards and TMDL must also receive approval from the U.S. Environmental Protection Agency (U.S. EPA).
8. The regulatory action meets the "Necessity" standard of the Administrative Procedures Act, Government Code section 11353, subd. (b). The necessity of developing the TMDL is established in the TMDL project report, the section 303(d) list, and the data contained in the administrative record documenting the mercury impairments in the Sacramento-San Joaquin Delta Estuary.

THEREFORE BE IT RESOLVED THAT:

The State Water Board:

1. Approves the Basin Plan Amendment as adopted under Central Valley Water Board Resolution R5-2010-0043.
2. Authorizes the Executive Director or designee to submit the Basin Plan Amendment adopted under Central Valley Water Board Resolution R5-2010-0043, as approved, and the administrative record for this action to the Office of Administrative Law and the water quality standards and TMDL to the U.S. EPA for approval.

## CERTIFICATION

The undersigned Clerk to the Board does hereby certify that the foregoing is a full, true, and correct copy of a resolution duly and regularly adopted at a meeting of the State Water Resources Control Board held on June 21, 2011.

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Jeanine Townsend  
Clerk to the Board